Claims

1. A voice-producing prosthesis, comprising:

a housing (15; 45) for placement in a passage (5) between the esophagus (4) or throat and an upper region of the trachea (1),

a passage through said housing (15; 45) for passing air, and

at least one vibratingly movable vibrating element (17, 18; 47; 77; 107, 108) for vibrating air having at least one base frequency,

characterized by at least one stop (20, 21; 56-58; 110, 111) for abruptly impeding the movability of the at least one vibrating element (17, 18; 47; 77; 107, 108) in at least one position, the at least one vibrating element (17, 18; 47; 77; 107, 108) being arranged to increase the sound volume and the base frequency with the intensity of an airflow through the passage.

2. A voice-producing prosthesis according to any one of the preceding claims, wherein the at least one vibrating element (17, 18; 47; 77) is designed as a flexible lip projecting into or before the passage (16; 46).

3. A prosthesis according to any one of the preceding claims, wherein the vibrating element (17, 18; 107, 108) projects from a substantially immovable connection to the housing (15) in the passage (16), and wherein the stop (20, 21; 110, 111) is located opposite a portion of the vibrating element (17, 18; 107, 108) spaced from said immovable connection.

4. A prosthesis according to claim 3, wherein the stop (20, 21; 110, 111) is located opposite a portion (21, 20; 110, 111) of the vibrating element (17, 18; 107, 108) located near a free end thereof.

5. A prosthesis according to any one of the preceding claims, wherein the vibrating element (17, 18; 107, 108), in

a condition of rest, abuts against said stop ((20, 21; 110, 111).

6. A prosthesis according to any one of the preceding claims, wherein the vibrating element (17, 18; 107, 108), in the condition of rest, abuts against said stop ((20, 21; 110, 111) with pretension.

7. A prosthesis according to any one of the preceding claims, wherein the stop (20, 21; 110, 111) is formed by a second vibrating element (17, 18; 107, 108).

8. A prosthesis according to any one of the preceding claims, wherein the vibrating element (17, 18; 47) is designed as a lip projecting from a wall of the passage (16; 46), a free end of said lip, in the condition of rest, being directed in a direction substantially parallel to the passage (16; 46).

9. A prosthesis according to any one of the preceding claims, comprising vibrating elements in the form of two mutually substantially identical lips (17, 18) which, in the condition of rest, abut against each other.

10. A prosthesis according to any one of the preceding claims, further comprising at least one passage (22, 23) along the at least one vibrating element (17, 18; 107, 108) for passing air along the at least one vibrating element (17, 18; 107, 108) in any position of the vibrating element (17, 18; 107, 108).

11. A prosthesis according to any one of the preceding claims, wherein the vibrating element (17, 18; 47; 77; 107, 108) is arranged to carry out displacements, resulting in air pulses, of which the first derivative shows discontinuities.

12. A prosthesis according to any one of the preceding claims, wherein the vibrating element (17, 18; 47; 77; 107, 108) is arranged to generate vibrations with a frequency spectrum of sinusoids comprising a base frequency and frequencies above, of which the intensity is lower by 10-14 dB/octave.

13. A prosthesis according to any one of the preceding claims, wherein the at least one vibrating element (107, 108) comprises a hollow space filled with a fluid or a soft substance (120, 121).

14. A prosthesis according to claim 13, wherein the fluid (120, 121) is a liquid.

15. A one-way valve for placement in a wall (5) between the esophagus (4) and the trachea (1) of a patient, comprising a housing (12) with a passage (11) and a closing body (13) for closing said passage (11), further comprising a prosthesis according to any one of the preceding claims located in the passage (11).